

IN THE CLAIMS:

1. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and

second crystallizing the semiconductor film comprising silicon in an atmosphere comprising hydrogen after the first crystallizing step.

2. (Original) A method according to claim 1, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

3. (Original) A method according to claim 1, wherein a catalyst element comprising nickel is used in the crystallizing steps.

4. (Original) A method according to claim 1, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

5. (Original) A method according to claim 1, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

6. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and

second crystallizing the semiconductor film comprising silicon in an atmosphere comprising nitrogen after the first crystallizing step.

7. (Original) A method according to claim 6, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

8. (Original) A method according to claim 6, wherein a catalyst element comprising nickel is used in the crystallizing steps.

9. (Original) A method according to claim 6, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

10. (Original) A method according to claim 6, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

11. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and

second crystallizing the semiconductor film comprising silicon in an atmosphere comprising hydrogen after the first crystallizing step,

wherein each of the first and the second crystallizing steps is conducted at a temperature between 500 and 800 °C.

12. (Original) A method according to claim 11, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

13. (Original) A method according to claim 11, wherein a catalyst element comprising nickel is used in the crystallizing steps.

14. (Original) A method according to claim 11, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

15. (Original) A method according to claim 11, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

16. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and

second crystallizing the semiconductor film comprising silicon in an atmosphere comprising nitrogen after the first crystallizing step,

wherein each of the first and the second crystallizing steps is conducted at a temperature between 500 and 800 °C.

17. (Original) A method according to claim 16, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

18. (Original) A method according to claim 16, wherein a catalyst element comprising nickel is used in the crystallizing steps.

19. (Original) A method according to claim 16, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

20. (Original) A method according to claim 16, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

21. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;

selectively forming a cover film over the semiconductor film comprising silicon;
first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and
second crystallizing the semiconductor film comprising silicon in an atmosphere comprising hydrogen after the first crystallizing step.

22. (Original) A method according to claim 21, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

23. (Original) A method according to claim 21, wherein a catalyst element comprising nickel is used in the crystallizing steps.

24. (Original) A method according to claim 21, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

25. (Original) A method according to claim 21, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

26. (Original) A method according to claim 21, wherein the cover film comprises silicon oxide.

27. (Original) A method according to claim 21, wherein the cover film comprises silicon nitride.

28. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising silicon over a substrate;
selectively forming a cover film over the semiconductor film comprising silicon;
first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and

second crystallizing the semiconductor film comprising silicon in an atmosphere comprising nitrogen after the first crystallizing step.

29. (Original) A method according to claim 28, wherein the semiconductor film comprising silicon has a thickness of 1500 Å or less.

30. (Original) A method according to claim 28, wherein a catalyst element comprising nickel is used in the crystallizing steps.

31. (Original) A method according to claim 28, wherein each of the first and the second crystallizing steps is conducted by a heat treatment.

32. (Original) A method according to claim 28, further comprising a step of treating the semiconductor film comprising silicon in a hydrochloric acid or a hydrofluoric acid after the second crystallizing step.

33. (Original) A method according to claim 28, wherein the cover film comprises silicon oxide.

34. (Original) A method according to claim 28, wherein the cover film comprises silicon nitride.